F00464

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey FIELD EXAMINATION

Field No. NONE

Registry No. F00464

LOCALITY

State MICHIGAN

General Locality GREAT LAKES

Locality DETROIT AND ST. MARY'S RIVERS

2000

CHIEF OF PARTY
BRIAN A. LINK, OIC

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28
(10/72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTER NO.

FE00464

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

None

State Michigan

General locality Great Lakes

Locality Detroit and St. Mary's River

Scale _____ Date of survey August 7 to September 13, 2000

Instructions dated 5-15-0 Project No. OPR-W408-NRB

Vessel Launch 1211 and 0517

Chief of party Brian A. Link

Surveyed by Brian Link and Mark McMann

Soundings taken by echo sounder, hand lead, pole Innerspace 448 Echo Sounder

Graphic record scaled by BAL/MJM

Graphic record checked by BAL/MJM

Protracted by MapInfo Ver. 5.0 Automated plot by: _____

Verification by Atlantic Hydrographic Branch √concur

Soundings in fathoms feet at MLW MLLW LWD IGLD 1985

REMARKS: Notes in the D.R. were made during office processing.

NOAA FORM 77-28 SUPERSEDES FORM C & GS-837.

This form was electronically produced by Elite Federal Forms, Inc.

Descriptive Report to Accompany
Hydrographic Survey FE00464
OPR-W408-NRB
Scale: 1:10,000
Navigation Response Team 1 – Launch 1211/517
Brian A. Link - Team Leader

This survey was conducted according to Port Instructions OPR-W408-NRB, Detroit and St. Clair Rivers, Michigan, dated May 15, 2000. This field examination covers areas in the lower Detroit River and the St. Mary's River.

The purpose of this field examination was to resolve discrepancies in the provided Electronic Navigational Chart cells of the Detroit and St. Mary's Rivers and determine the status of charted fish net stakes in the St. Mary's River between Bow and Surveyors Islands. The fish net stake survey was requested as the result of a constituent request to the USCG to place a buoy near the stakes charted location. The USCG requires the net stakes be removed from the chart before they can place the buoy.

A. AREA SURVEYED

The approximate survey area limits are:

Detroit River	St. Mary's River
North - 42°16'36.5"N	North - 46°30'53.4"N
South - 42°07'31.1"N	South - 46°02'00.2"N
East - 083°06'29.9"W	East - 083°49'23.1"W
West - 083°10'47.3"W	West - 084°24'00.3"W

This survey was conducted from August 7, 2000 (DN 220) to September 13, 2000 (DN 257). Circle

B. DATA ACQUISITION AND PROCESSING - See also The Evaluation Report.

B1. Equipment

An Innerspace model 448 depth sounder, S/N 241 was used to acquire all echo soundings on this survey. No problems were encountered with the sounding equipment.

A Starlink DGPS Beacon Receiver (S/N 853) was used as the remote station on launch 517.

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 192276-287. concur

NOAA launch 517, a 21-foot MonArk with a draft of 0.3 meters, was used to acquire all sounding and side scan sonar survey data as well as for ENC verification on the St. Mary's River. NOAA launch 1211 was used for ENC verification on the Detroit River. There were no unusual vessel configurations or problems encountered with the vessel.

B2. Quality Control

The integrity of the survey data for FE00464 is insured by adherence to the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 2000.

A static draft of 0.3 meters was applied to the sounding plots by the HPS REAPPLY program. The draft was measured by subtracting the difference from a punch mark on the side of launch 517, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 517, which was borrowed from the NOAA Ship Rude to finish up the reconnaissance surveys of the Detroit and St. Clair Rivers and to conduct this FE survey, were not taken prior to using the vessel on this survey. No data was obtained which should require sounding reduction, however should the need arise, settlement and squat data should be obtained from the NOAA Ship Rude or one of their year 2000 surveys.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to a calibration point determined using the Trimble Pro XRS portable GPS system. The point was set at the launch mooring location, which for this survey was at the Knight Marina, on the Belle River, in Marine City, Michigan. All records of the calibrations were either destroyed in the fire which consumed launch 1211 on August 19, 2000 or not available because of the shut down of the field party which conducted this survey, causing the temporary abandonment of the trailer housing this information. None of the calibration values exceeded tolerances.

B3. Corrections to Echo Soundings

There are no deviations to be discussed in this section. Refer to Section **C. Correction to Echo Soundings** of the Data Acquisition and Processing Report.

C. VERTICAL AND HORIZONTAL CONTROL

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors.

No data was obtained on this survey which requires water level reduction. Actual water levels were not requested for FE00464.

The horizontal control datum for this project is the North American Datum (NAD) of 1983. The control reference station used for the side scan sonar survey to locate or disprove the charted net stakes was the USCG DGPS beacon Cheboygan, MI (Station ID #836), located at 45° 39.2091' N;84° 27.93836' W. The USCG DGPS beacon at Pickford, MI, located at 46° 3.88482' N; 084° 21.71027' W (Station ID #835) was used to correct Trimble Pro XRS data obtained in the St. Mary's River and the beacon at Saginaw, MI, located at 43° 37.71816' N;83° 50.26568' W (Station ID #837) was used to correct Trimble Pro XRS data obtained in the Detroit River. The Pro XRS data was originally acquired without differential correctors, but was corrected during post-processing using the Trimble Pathfinder software Differential Correction Utility.

D. RESULTS AND RECOMMENDATIONS – See also the Evaluation Report

The table on the following page is a synopsis of the features located or investigated on this field examination. ProXRS shown under the method column for several features refers to the Trimble backpackable GPS system. Under the recommendation column, Chart refers to the conventional paper chart and ENC refers to Electronic Navigational Charts. Plot # refers to the number of the page size plot included as part of this report.

Feature 9 is the Grosse Ille south bridge, which was identified in the Port Instructions as a feature to be located. The bridge appears to be accurately located on both the conventional paper chart as well as the ENC. - Concur w/Conditions - See Sheet 4 of 7, See E+A Report page 3 Sect D1.D.1.a

Feature 10 was investigated with 400% coverage side scan sonar. Nothing was found. Sounding, trackline, and swath plots are included with this survey. Concur (1) Plots associated with this item are appended to This Report. See E+A Report Sect D1.H.1. page 4.

Features 11 – 15 are charted privately maintained Canadian buoys, which were not observed during the routine ENC verification. Likewise, features 17 and 18 also were not observed. See Sheet 3 of 7 See E+A Report Section D1.B.3. page 2.

Feature 19 is a new municipal marina which has been completed just below the Soo Locks. Prominent points around the marina were located using the Trimble ProXRS GPS. These points were then geo-referenced to an engineering drawing furnished by the Harbor Master and included with this report. This geo-referenced drawing was then overlaid on Chart 14884 using MapInfo. The resulting MapInfo table was then exported as a DXF file for display in Hypak on the ENC, shown on plot 19. The chart representation shows the new marina encroaching on the museum ship Valley Camp, shown on the chart as the hatched area just east of the new marina. The Valley Camp actually lines up with the centerline of Johnstone Street. The estimated shift is shown on plot 19A. Concur - See Sheet 1 of 7, See E+A Report Section D1.A.1. pages 1 and 2.

The remaining features should be adequately explained in the table or on the plots. Concur See also Evaluation Report Section D.

Detroit River (including Trenton Channel)							
#	*Feature*	*Latitude(N)*	*Longitude(W)*	*Method*	*Recommendation*	*DN*	*Plot#*
1	dolphin	042:16:27.93	083:06:37.61	ProXRS	Add to Chart&ENC	220	P1/P2
2	dolphin	042:16:27.64	083:06:37.01	ProXRS	Add to Chart&ENC	220	P1/P2
3	dolphin	042:16:26.67	083:06:36.08	ProXRS	Add to Chart&ENC	220	P1/P2
4	dolphins	042:16:07.22	083:06:43.65	ProXRS	Add to Chart&ENC	220	P1/P3
5	bulkhead	042:13:06.13	083:08:28.36	ProXRS	Add to ENC	220	P4
6	bulkhead	042:11:09.64	083:09:01.15	ProXRS	Add to ENC	220	P5
7	blkhd (n)	042:09:41.47	083:09:57.14	ProXRS	Add to Chart&ENC	220	P6/P7
8	blkhd (s)	042:09:25.65	083:10:01.84	ProXRS	Add to ENC	220	P6/P7
9	bridge	042:07:38.39	083:10:27.64	ProXRS	Add to ENC	237	P8
St. Mary's River							
#	*Feature*	*Latitude(N)*	*Longitude(W)*	*Method*	*Recommendation*	*DN*	*Plot#*
10	net stakes	046:02:05.32	083:49:23.05	SSS	Delete from Chart	256	P9-P15
11	buoyRS4	046:30:05.21	084:23:58.25	visual	Delete from Chart&ENC	257	P16
12	buoy S3	046:30:04.06	084:24:09.52	visual	Delete from Chart&ENC	257	P16
13	buoy S6	046:30:01.02	084:24:09.97	visual	Delete from Chart&ENC	257	P16
14	buoy S2	046:30:06.08	084:24:15.05	visual	Delete from Chart&ENC	257	P16
15	buoy S5	046:30:06.77	084:24:13.93	visual	Delete from Chart&ENC	257	P16
16	logboom	046:30:48.10	084:22:08.44	ProXRS	Add to ENC	257	P17
17	FY light	046:30:47.82	084:21:57.32	visual	Delete from Chart&ENC	257	P18
18	FY light	046:30:43.38	084:22:15.44	visual	Delete from Chart&ENC	257	P18
19	marina	046:29:58.56	084:20:13.74	ProXRS	Add to Chart&ENC	256	P19/P19a
20	filled area	046:29:39.55	084:19:24.64	hydroDP	Add to Chart&ENC	256	P20/P21
21	drydock	046:29:36.17	084:19:09.91	hydroDP	Add to Chart&ENC	256	P21/P22
22	ferry term	046:29:06.43	084:18:04.21	ProXRS	Add to ENC	256	P23
23	ferry term	046:29:03.44	084:17:49.96	ProXRS	Add to ENC	256	P23

Sheet 7

Sheet 6

Sheet 5

Sheet 4

No smooth plot

Sheet 3

Sheet 3

Sheet 3

Sheet 1

Sheet 2

No AWOIS items were assigned for this project because of the perceived [during project planning] time constraints to complete the higher priority bathymetry. Concur

There were no Danger to Navigation reports submitted for this survey. Concur

APPROVAL SHEET
Field Examination Survey
OPR-W408-NRB
F00464
September 2000

This field examination survey was conducted in accordance with the Project Instructions for OPR-W408-NRB, the Hydrographic Manual, the Hydrographic Survey Guidelines, the Field Procedures Manual and the Hydrographic Specifications and Deliverables Manual. All reports, records, and survey sheets were reviewed by the team leader. The team leader directly supervised this survey.

This survey is a complete field examination survey for the areas described in Section A of this report.

Brian A. Link
Team Leader, Navigation Response Team 1

John W. Humphrey, CDR, NOAA
Chief, Navigation Response Branch

NOAA FORM 61-29
(12-71)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REFERENCE NO.
N/CS33-23-03

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY (Check)

☐ ORDINARY MAIL ☐ AIR MAIL
☐ REGISTERED MAIL ☒ EXPRESS
☐ GBL (Give number)_____

DATE FORWARDED 06/23/2003

NUMBER OF PACKAGES 1

TO:

CHIEF, DATA CONTROL GROUP, N/CS3x1
NOAA / NATIONAL OCEAN SERVICE
STATION 6815, SSMC3
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910-3282

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

F00464

MICHIGAN, GREAT LAKES, DETROIT AND ST. MARY'S RIVERS

ONE TUBE CONTAINING THE FOLLOWING:

1 ORIGINAL DESCRIPTIVE REPORT AND ACCOMPANYING PAGE SIZED SMOOTH PLOTS FOR F00464
5 DRAWING HISTORY FORMS (NOAA FORM #76-71) FOR NOS CHARTS 14884 (2), 14854, 14848, AND 14882
1 RECORD OF APPLICATION TO CHART FORM (NOAA FORM #75-96)
5 H-DRAWINGS ON MYLAR FOR NOS CHARTS 14884 (2), 14854, 14848, AND 14882

FROM: (Signature) Edward A. Blanc

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

NOAA \ NATIONAL OCEAN SERVICE
ATLANTIC HYDROGRAPHIC BRANCH N/CS33
439 WEST YORK STREET
NORFOLK, VA. 23510-1114

NOAA FORM 61-29 SUPERCEDES FORM C AND GS 413 WHICH MAY BE USED.

U.S. GOVERNMENT PRINTING OFFICE: 1988 - 554-006-61309

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR F00464 (2000)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System (HPS)
MapInfo, version 6.50
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheets were plotted using a Hewlett-Packard DesignJet 2500CP plotter.

D. COMPARISON WITH CHART 14884 (38th Edition, Oct 30/99)
14882 (34th Edition, Aug 12/00)
14854 (13th Edition, May 20/00)
14848 (56th Edition, Nov 10/01)

D1. RESULTS AND RECOMMENDATIONS:

A. Sheet One Chart 14884

1) ENC FEATURE #19 is an uncharted municipal marina, in the vicinity of Latitude 46°29'58.56"N, Longitude 84°20'13.74"W. This item originates with the present survey. It is recommended that George Kemp Municipal Marina be charted as shown on the present survey. A City of Sault Ste. Marie Site Plan for the Marina is included at the end of this report.

2) ENC FEATURE #19 also includes the repositioning of the museum ship, Valley Camp, charted in Latitude 46°29'57.5"N, Longitude 84°20'11.5"W. This item originates with prior unavailable sources. Based on present survey information, the ship should be charted just east of the new marina centered in Latitude 46°29'57.0"N, Longitude 84°20'11.5"W. It is recommended that the charted location of the museum ship be revised to reflect the present survey findings.

3) ENC FEATURE #20 is an uncharted fill area, in the vicinity of Latitude 46°29'39.55"N, Longitude 84°19'24.64"W. This item originates with the present survey. It is recommended that the fill area be charted behind the charted pilings as shown on the present survey.

4) ENC FEATURE #21 is an uncharted floating drydock, in the vicinity of Latitude 46°29'36.17"N, Longitude 84°19'09.91"W. This item originates with the present survey. It is recommended that the charted pier be removed and a floating drydock be charted as shown on the present survey.

B. Sheet Three Chart 14884

1) ENC FEATURE #16 is a logboom charted in the vicinity of Latitude 46°30'48.10"N, Longitude 84°22'08.44"W. This item originates with an unknown source and was repositioned by the present survey. Based on present survey information, the eastern end of the logboom is more southward than charted. It is recommended that minor revisions be made to the chart based on present survey findings.

2) ENC FEATURES #17 and 18 are two Fixed Yellow Lights charted in Latitude 46°30'47.82"N, Longitude 84°21'57.32"W and Latitude 46°30'43.38"N, Longitude 84°22'15.44"W. According to present survey information, these lights are no longer in the area. The field recommends removing them from the chart. We defer to MCD Update Service Branch for charting recommendations for Aids to Navigation.

3) ENC FEATURES #11 through 15 are five privately maintained buoys RS"4" charted in Latitude 46°30'05.21"N, Longitude 84°23'58.25"W, S"3" charted in Latitude 46°30'04.06"N, Longitude 84°24'09.52"W, S"6" charted in Latitude 46°30'01.02"N, Longitude 84°24'09.97"W, S"2" charted in Latitude 46°30'06.08"N, Longitude 84°24'15.05"W and S"5" charted in Latitude 46°30'06.77"N, Longitude 84°24'13.93"W. According to the present survey information, these buoys are no longer in the area. The field recommends removing them from the chart. We defer to MCD Update Service Branch for charting recommendations for Aids to Navigation.

C. Sheet Two Chart 14884

1) ENC FEATURES #22 and 23 are two ferry terminals

charted in the vicinity of Latitude 46°29'06.43"N, Longitude 84°18'04.21"W and Latitude 46°29'03.44"N, Longitude 84°17'49.96"W. These terminals originate with unknown sources and were positioned by the present survey. The charted positions and field positions compare favorably, but the charted portrayal differs from the field portrayal of the ferry terminals. The field did not provide enough detail to make an accurate change to the chart. Therefore, no changes in charting are recommended at this time.

2) ENC FEATURES #22 and 23 also included the positioning of three uncharted dolphins in Latitude 46°29'05.5"N, Longitude 84°17'51.6"W, Latitude 46°29'06.0"N, Longitude 84°17'50.5"W, and Latitude 46°29'09.8"N, Longitude 84°18'06.3"W. These dolphins originate with the present survey. It is recommended that the dolphins be charted as shown on the present survey.

D. Sheet Four Chart 14854

1) ENC FEATURE #9 is a bridge charted in the vicinity of Latitude 42°07'38.39"N, Longitude 83°10'27.64"W. This item originates with an unknown source and was repositioned by the present survey. Based on present survey information, the swing portion of the bridge is more easterly than charted. The western bridge span extends farther east than is charted. It is recommended that the above revisions be made to the chart based on present survey findings.

E. Sheet Five Chart 14854

1) ENC FEATURE #6 is an uncharted bulkhead in the vicinity of Latitude 42°11'09.64"N, Longitude 83°09'01.15"W. The new bulkhead and the changes to the existing bulkhead originate with the present survey. The present survey found an uncharted southwest extension to the existing bulkhead as well as a slightly different configuration to the charted bulkhead. It is recommended that the above revisions be made to the chart based on present survey findings.

2) ENC FEATURE #7 and #8 are revised positions on the ends of a charted bulkhead. The northern end of the bulkhead was positioned in Latitude 42°09'41.47"N, Longitude 83°09'57.14"W and the southern end of the bulkhead was positioned in Latitude 42°09'25.65"N, Longitude 83°10'01.84"W

by the present survey. This puts the bulkhead slightly east of the charted position. It is recommended that the portrayal of the bulkhead be updated to reflect present survey findings.

3) TWO DOLPHINS not discussed by the field in the Descriptive Report are charted at the Grosse Ile Swing Bridge in the vicinity of Latitude 42°10'26.35"N, Longitude 83°09'43.3"W and Latitude 42°10'23.4"N, Longitude 83°09'45.2"W. These dolphins originate with an unknown source. Per telephone discussion with the hydrographer, these dolphins no longer exist. Since there was no concrete evidence submitted by the field, side scan sonar, multibeam, to disprove the existence of these dolphins, it is recommended that the dolphins be retained as charted and that the accompanying Dol notes be revised to Subm dol. The hydrographer verified that the bridge is correctly charted.

F. Sheet Six Chart 14854

1) ENC FEATURE #5 is the revised position on a charted bulkhead in the vicinity of Latitude 42°13'06.13"N, Longitude 83°08'28.36"W. The changes to the existing bulkhead originate with the present survey. Also, the charted ruins on the bulkhead, in the vicinity of Latitude 42°13'04.18"N, Longitude 83°08'28.05"W are no longer there. It is recommended that the ruins be deleted and the bulkhead be revised based on present survey findings.

G. Sheet Seven Chart 14848

1) ENC FEATURES #1 through #4 are 5 dolphins charted in the vicinity of Latitude 42°16'27.93"N, Longitude 83°06'37.61"W, Latitude 42°16'27.64"N, Longitude 83°06'37.01"W, Latitude 42°16'26.67"N, Longitude 83°06'36.08"W and two charted in the vicinity of Latitude 42°16'07.22"N, Longitude 83°06'43.65"W. The field positions verified the charted position of the dolphins. There are other charted dolphins in the area of the first three, but no mention of them was made by the field. No change in the charting of the dolphins is recommended at this time, however, it is recommended that the areas be labeled Dols.

H. ENC FEATURE #10 Chart 14882

1) ENC FEATURE #10 was assigned to verify the

existence of the "submerged net stakes" charted in the vicinity of Latitude 46°02'05.32"N, Longitude 83°49'23.05"W. The field acquired 400% side scan sonar coverage over the charted stakes with negative results. No indication of the submerged net stakes was found by the present survey. It is recommended that the symbols and labels for the "submerged net stakes" be removed from the chart. Also, reposition the (see note D)note in the vicinity of this item. Field plots P9 - P15, appended to the end of this report, show the field work done on this item.

D2. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. The following NOS Charts were used for compilation of the present survey:

14884 (38th Edition, Oct 30/99) 1:20,000, 1:40,000
14882 (34th Edition, Aug 12/00) 1:40,000
14854 (13th Edition, May 20/00) 1:15,000
14848 (56th Edition, Nov 10/01) 1:30,000

D3. ADEQUACY OF SURVEY

This is an adequate field examination survey. No additional work is recommended.

F00464

Edward A. Owens
Physical Scientist
Atlantic Hydrographic Branch

APPROVAL SHEET
F00464

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Deborah A. Bland
Cartographer,
Atlantic Hydrographic Branch

Date: 10 JUNE 2003

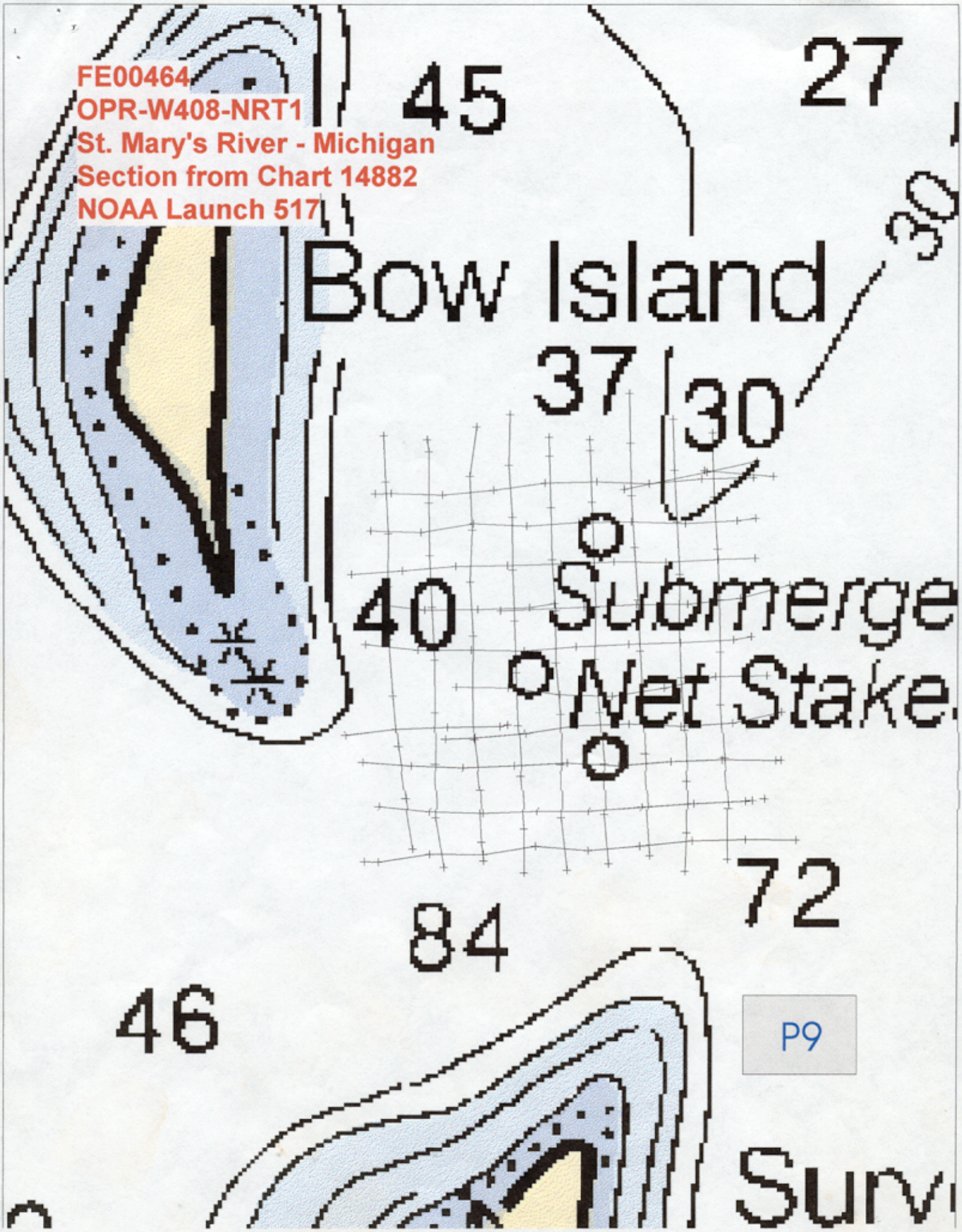
I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

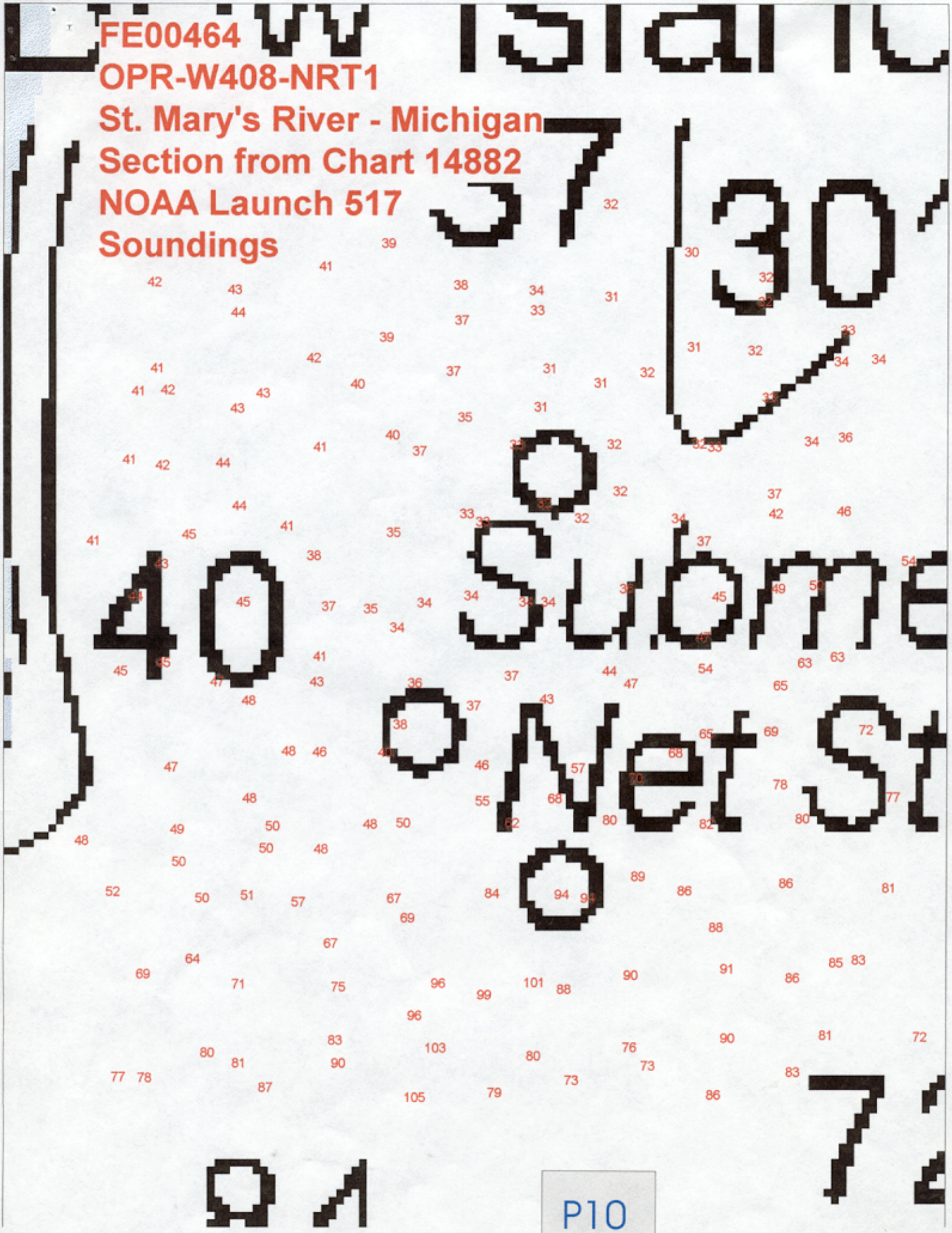
Approved: _____

Emily B. Christman
Commander, NOAA
Chief, Atlantic Hydrographic Branch

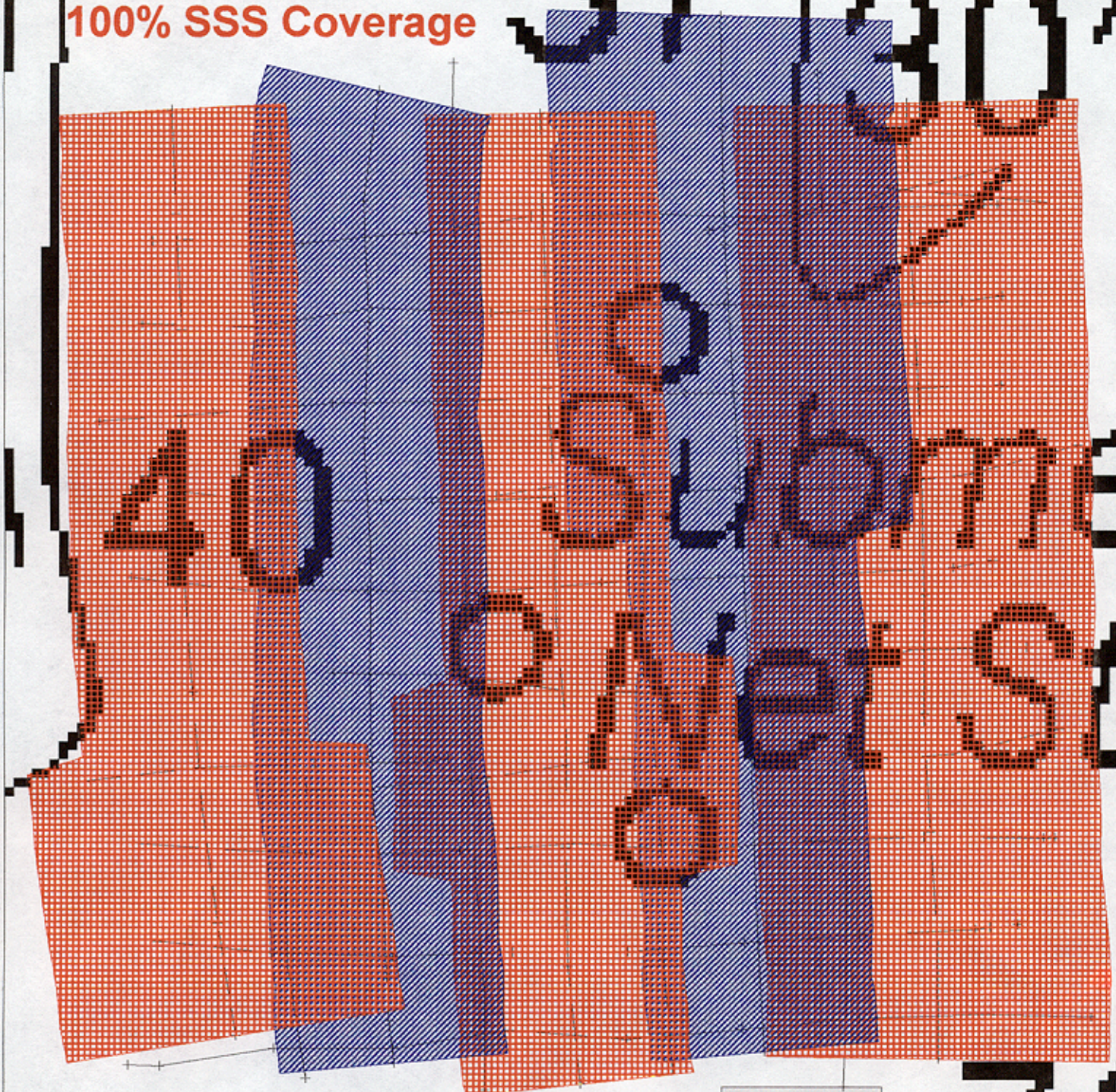
Date: 16 JUNE 2003

AWOIS check
8/15/03 mcR


FE00464
OPR-W408-NRT1
St. Mary's River - Michigan
Section from Chart 14882
NOAA Launch 517
45
27
Bow Island
37
30
40
Submerge
Net Stake
72
84
46
P9
Surv

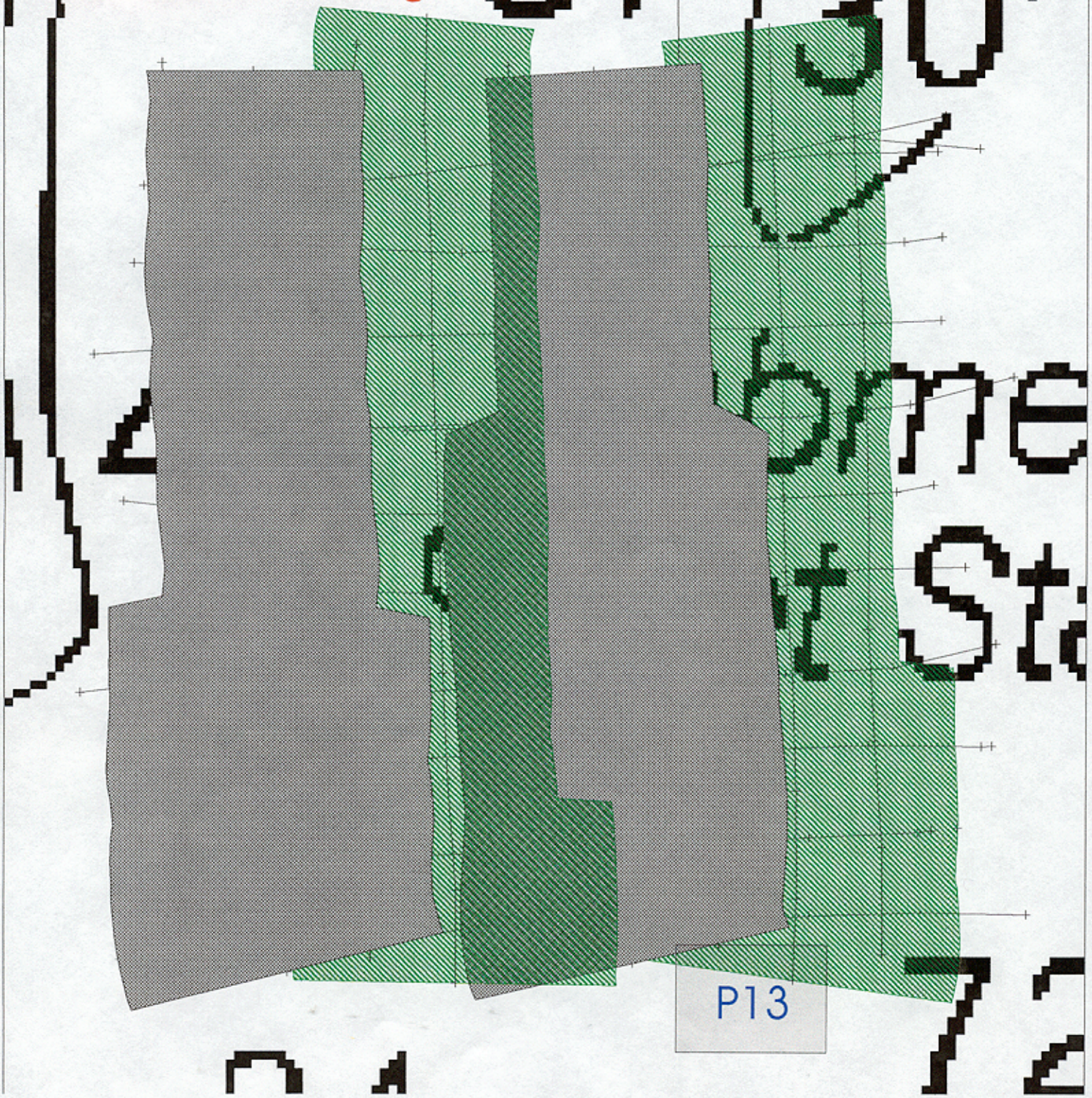

FE00464
OPR-W408-NRT1
St. Mary's River - Michigan
Section from Chart 14882
NOAA Launch 517
Soundings
P10

FE00464
OPR-W408-NRT1
St. Mary's River - Michigan
Section from Chart 14882
NOAA Launch 517
100% SSS Coverage

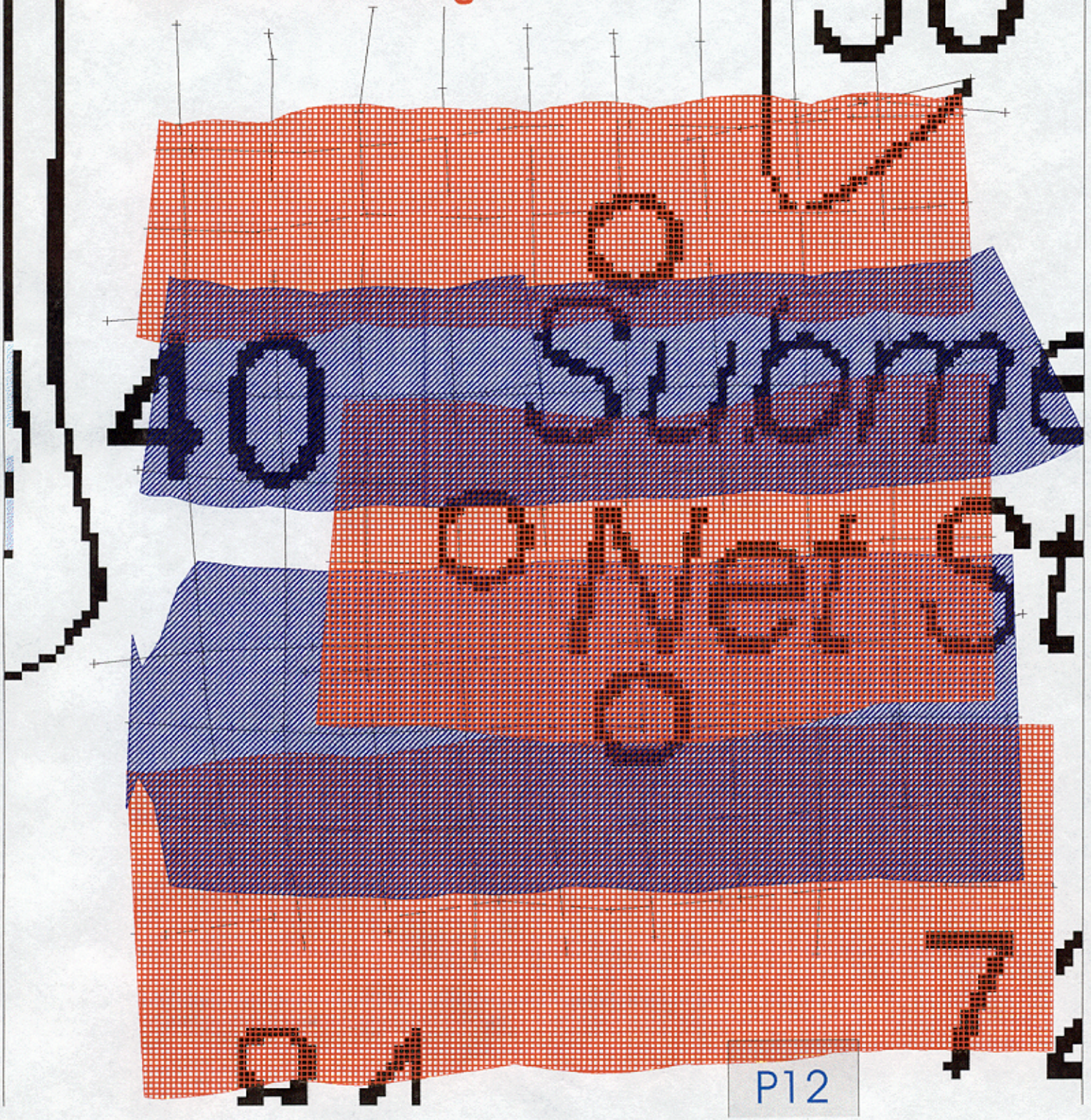


P14

FE00464
OPR-W408-NRT1
St. Mary's River - Michigan
Section from Chart 14882
NOAA Launch 517
200% SSS Coverage

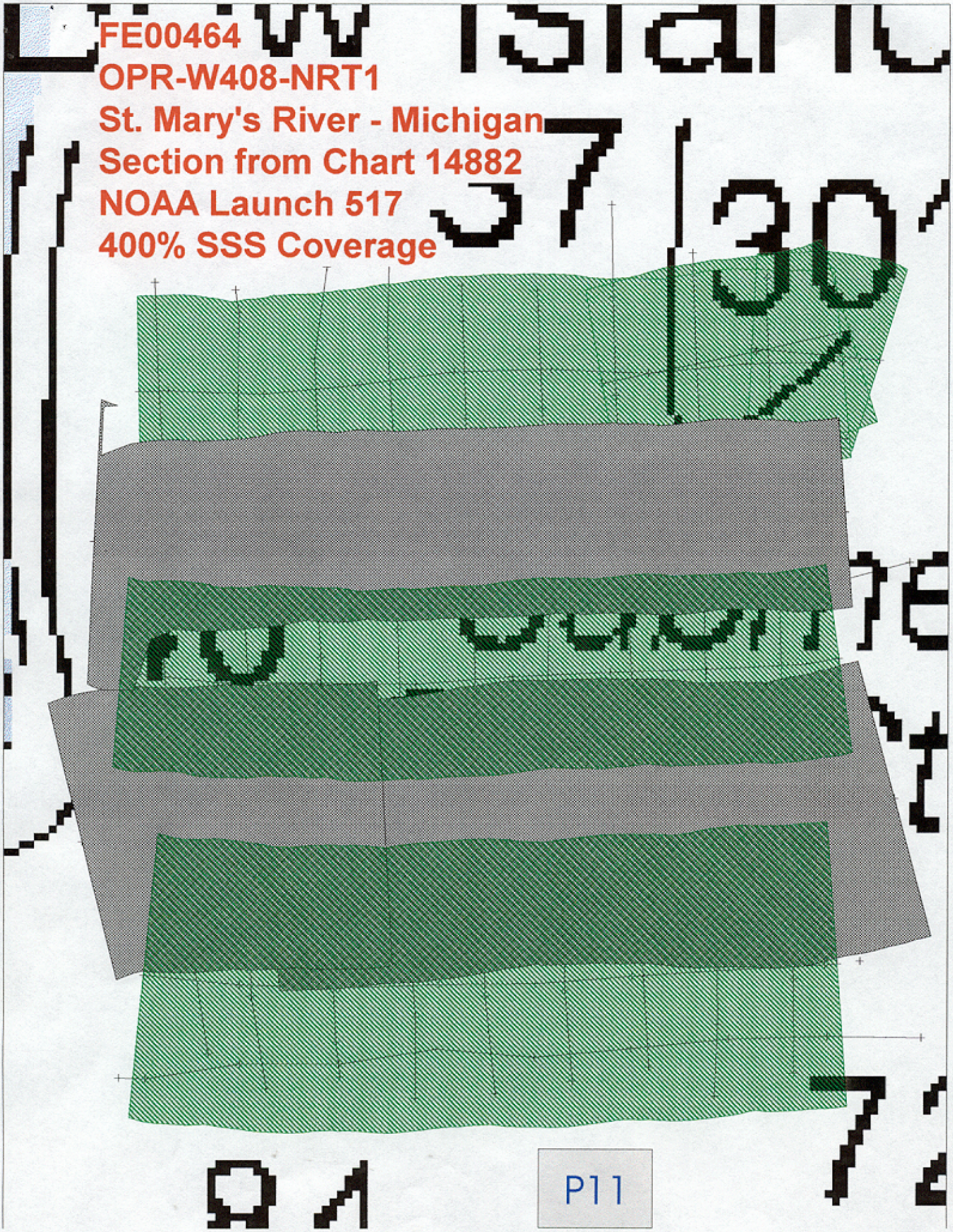


FE00464
OPR-W408-NRT1
St. Mary's River - Michigan
Section from Chart 14882
NOAA Launch 517
300% SSS Coverage



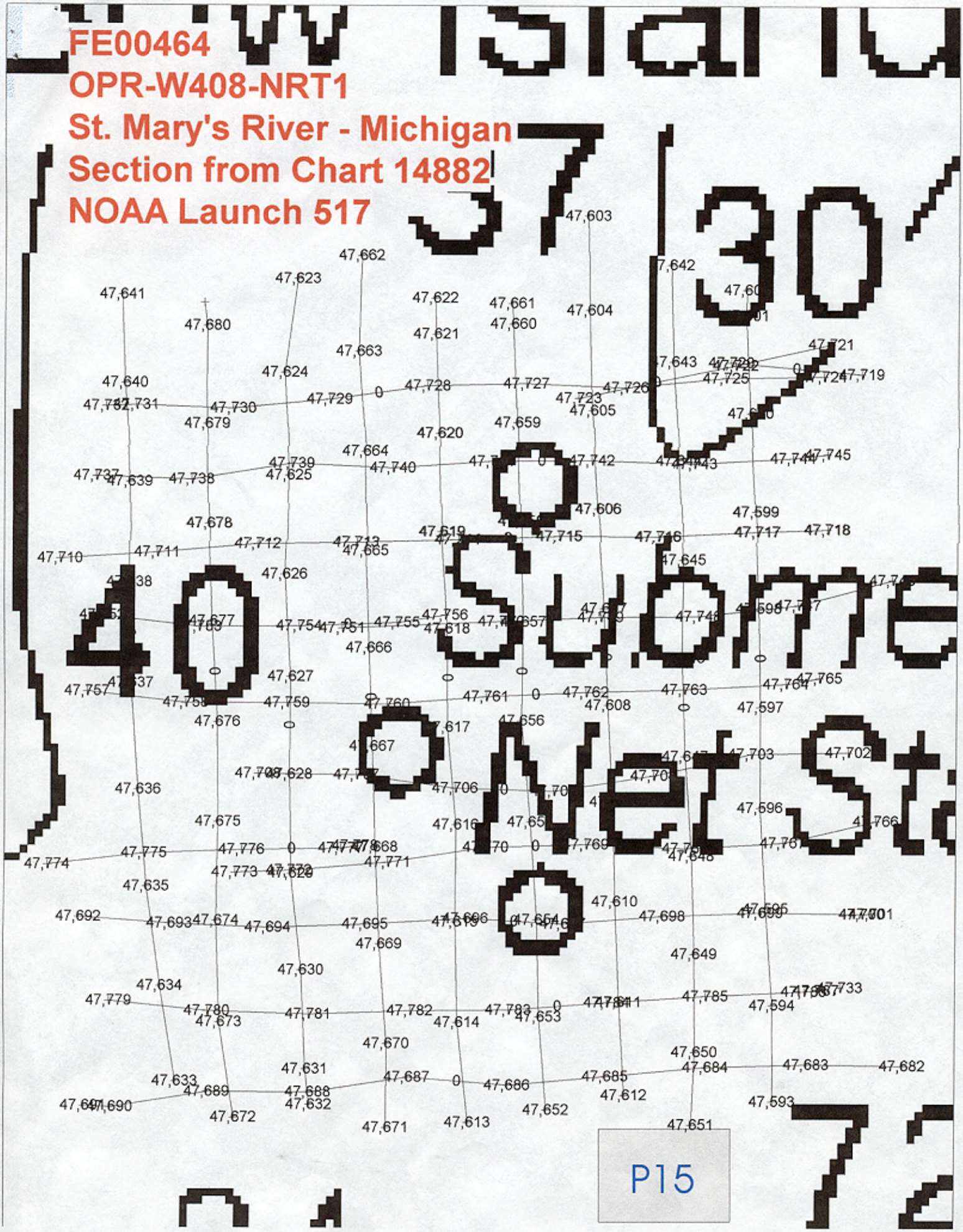
P12

FE00464
OPR-W408-NRT1
St. Mary's River - Michigan
Section from Chart 14882
NOAA Launch 517
400% SSS Coverage



P11

FE00464
OPR-W408-NRT1
St. Mary's River - Michigan
Section from Chart 14882
NOAA Launch 517



P15

84° 20'30"

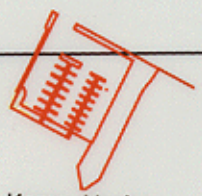
84° 20'00"

84° 19'30"

46° 30'30"

F00464
MICHIGAN
SAULT STE MARIE RIVER
SAINT MARYS FALLS
SCALE: 1:10,000
SEP 12, 2000
NORTH AMERICAN DATUM OF 1983
SOUNDINGS IN FEET AT MLLW
SHEET 1 OF 7
ENC FEATURES *19 AND *20

46° 30'00"



George Kemp Marina

fill area

floating drydock

46° 29'30"

84° 18'30"

84° 18'00"

84° 17'30"

F00464
MICHIGAN
SAULT STE MARIE RIVER
SAINT MARYS FALLS
SCALE: 1:10,000
SEP 12, 2000
NORTH AMERICAN DATUM OF 1983
SOUNDINGS IN FEET AT MLLW
SHEET 2 OF 7
ENC FEATURES *22 AND *23

46° 29'30"

46° 29'00"

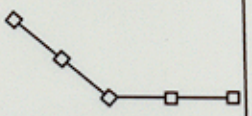
46° 28'30"

84° 23'00"

84° 22'30"

84° 22'00"

46° 31'00"



46° 30'30"

F00464
ONTARIO, CANADA
SAULT STE MARIE RIVER
A.B. MCLEAN EXPORT DOCK TO SAULT STE MARIE CANAL
SCALE: 1:10,000
SEP 13, 2000
NORTH AMERICAN DATUM OF 1983
SOUNDINGS IN FEET AT MLLW
SHEET 3 OF 7
ENC FEATURES *11 - *18

46° 30'00"

83° 11'00"

83° 10'30"

83° 10'00"

F00464
MICHIGAN
DETROIT RIVER
GROSSE ILE SOUTH BRIDGE
SCALE: 1:10,000
AUG 25, 2000
NORTH AMERICAN DATUM OF 1983
SOUNDINGS IN FEET AT MLLW
SHEET 4 OF 7
ENC FEATURE *9

42° 08'00"

42° 07'30"

83° 10'00"

83° 09'30"

83° 09'00"

bkhd

42° 11'00"

F00464
MICHIGAN
DETROIT RIVER
VICINITY OF TRENTON CHANNEL
SCALE: 1:10,000
AUG 07, 2000
NORTH AMERICAN DATUM OF 1983
SOUNDINGS IN FEET AT MLLW
SHEET 5 OF 7
ENC FEATURES *6 - *8 AND DISCONTINUED DOLPHINS

42° 10'30"

42° 10'00"

bkhd

42° 09'30"

83° 09'00"

83° 08'30"

42° 13'30"

bkhd

42° 13'00"

F00464
MICHIGAN
DETROIT RIVER
BOW ISLAND
SCALE: 1:10,000
AUG 07, 2000
NORTH AMERICAN DATUM OF 1983
SOUNDINGS IN FEET AT MLLW
SHEET 6 OF 7
ENC FEATURE *5

83° 07'00"

83° 06'30"

83° 06'00"

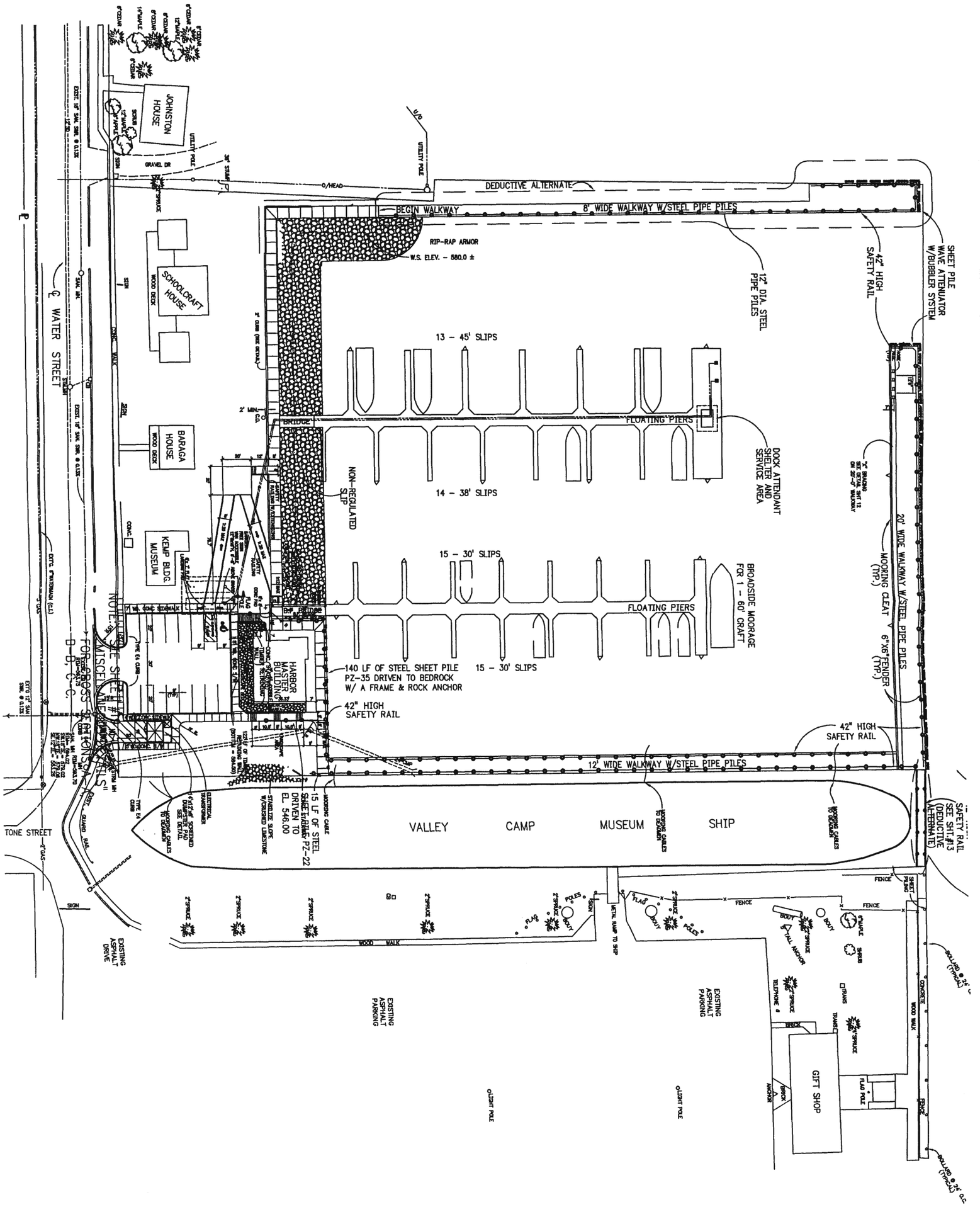
F00464
MICHIGAN
DETROIT RIVER
VICINITY OF RIVER ROUGE
SCALE: 1:10,000
AUG 07, 2000
NORTH AMERICAN DATUM OF 1983
SOUNDINGS IN FEET AT MLLW
SHEET 7 OF 7
ENC FEATURES *1 - *4

42° 16'30"

dol
dol
dol

two dols

42° 16'00"



SHT 1 OF 1	ISSUED FOR: M.D.E. PERMIT FOR CITY	SITE PLAN MARINERS PARK MARINA CITY OF SAULT STE. MARIE, CHIPPEWA COUNTY, MICHIGAN	REVISIONS: F & W REVISIONS - MMM 7/15/97	Gourdie/Fraser & Associates, Inc. Consulting Engineers Surveyors Planners	124 West State Street P.O. Box 627 Traverse City, Michigan 49684 Ph: (616) 946-5874 Fax: (616) 946-3703
JOB NO. 940450C	DWG. NO. 940450LOUT				

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. F00464

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
14884	5/21/03	D.A. Blanc	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
14854	5/22/03	D.A. Blanc	
			Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
14848	5/23/03	D A Blanc	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
14882	5/28/03	D.A. Blanc	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
14884			Full ~~Part Before~~ After Marine Center Approval Signed Via
14882			Drawing No.
14848			
14854		Dave Merkle	Full ~~Part Before~~ After Marine Center Approval Signed Via
14883			Drawing No. Applied all features
14880			
14860			Full Part Before After Marine Center Approval Signed Via
14853			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED